

William F. Adler
Executive Director
Federal Regulatory Relations

1275 Pennsylvania Avenue, N.W., Suite 400
Washington, D.C. 20004
(202) 383-6435

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September 10, 1992

Donna R. Searcy, Secretary
Federal Communications Commission
1919 M Street, N.W. - Room 222
Washington, D.C. 20554

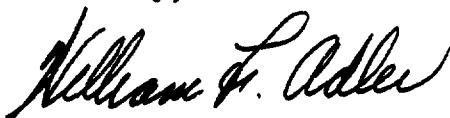
Re: CC Docket No. 92-105 Use of N11 Codes and Other
Abbreviated Dialing Arrangements

Dear Ms Searcy:

Attached is a written ex parte letter sent today from the undersigned to Mr. Peyton Wynns, Chief, Industry Analysis Division, Common Carrier Bureau. Please include the letter in the referenced docket.

I am filing two copies of this letter and its attachment in accordance with Section 1.1206(a)(1) of the Commission's rules. Please contact me if you have any questions concerning this matter.

Sincerely,



Attachment

CC: Peyton Wynns
Kenneth Robinson
Brian Fontes
Kathleen Abernathy
Madelon Kuchera
Linda Oliver
Cheryl Tritt

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Mr. Peyton Wynns
Chief, Industry Analysis Division
Common Carrier Bureau
Federal Communications Commission
1250 - 23rd Street, N.W. - Plaza Level
Washington, D.C. 20037

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: CC Docket No. 92-105, Use of N11 Codes and Other
Abbreviated Dialing Arrangements

Dear Mr. Wynns:

On July 23 I and two technical experts from Bellcore met with you to review technical considerations associated with the use of abbreviated dialing arrangements in the public switched telephone network. You requested that I follow up with a more detailed written explanation for the record in this proceeding. The following is based on information provided by Bellcore.

Use of N11 as a Numbering Plan Area (NPA) Code

In its Notice of Proposed Rulemaking (NPRM) in this proceeding, 7 FCC Rcd 3004 (1992), at §7, the Commission notes that "some N00 and N11 codes may have to be assigned as geographic area codes" before 1995. The North American Numbering Plan Administrator (NANPA) currently plans to assign the two remaining traditional geographic codes and the remaining N00 Service Areas Codes (SACs) as NPAs, if necessary, before assigning an N11 code as an NPA because the former would require fewer modifications to switches and support systems. It would, however, be technically feasible to use an N11 code as an NPA, taking into account existing switch architecture, modifications to switching and software support systems which would be necessary, and the time needed to deploy the capability throughout the network.

The LATA Switching System Generic Requirements (LSSGR), Section 5.3.3.1, states that NPA codes are restricted to exclude N11 codes. N11 codes are intended to serve special functions in the network, and at the completion of dialing the three digits in the N11 format, the call is processed. In call processing the input sequence is a reference for checking code validity and for determining the end of dialing. All input segments have an internal structure that defines segment length. Local switching systems should be capable of interpreting destination codes in accordance with the NANP and with the requirement set forth in the LSSGR. The only three digit format that has been defined as able to reach a destination is N11. Therefore, switching systems are designed

to recognize that once a call in the N11 format is dialed, the switch does not wait for additional digits but rather processes the call. If the N11 sequence requirement were to change to direct the switch to wait for additional digits before processing the call, each of the approximately 20,000 switches in the North American Numbering Plan (note that Canada, Mexico and the Caribbean are included) network would have to be modified to update its translation tables. Many of the most commonly used switches - Northern Telecom's DMS-10, -100 and -200, AT&T's 5ESS, 1ESS and 1AESS, and Ericsson's AXE-10 - were designed with sufficient flexibility to permit the local exchange carrier (LEC) to program N11 as an NPA without a great deal of difficulty. Others would require action by the switch manufacturer.

Introducing N11 as an NPA would require revising the LSSGR to remove the restriction against its use as an NPA, programming changes in the translation tables in all LEC switches, and coordinating the changes among all the switches in the network. Manufacturers would need to be advised so that their documentation remained current and accurate and their future generic programming releases would not adversely affect the local changes that were made. It would also be necessary to involve manufacturers in testing to ensure that calls were being processed in accordance with their requirements and that the local changes did not impact other available switching features. Finally, all support systems would have to be evaluated to determine the impact on the LEC's provisioning, operations and billing systems. There is likely to be a very significant impact on billing as some LECs may not be capable of billing N11 as an abbreviated form of dialing. There are no estimates available of the cost of these undertakings.

Use of N11 as a Central Office (CO) Code

As with an NPA code, use of N11 as a CO code is technically feasible. Although interchangeable CO codes were first introduced as long ago as 1974 (i.e., using 0 or 1 as the middle digit of the CO code), N11 is currently not assignable as a CO code. As noted above, the switches complete calls to N11 numbers without awaiting additional digits. Thus, calls to N11-XXXX are completed based only on the first three digits. The dialing sequence NPA-N11-XXXX is recognized as a "vacant" destination by the network, and a recorded message is returned to the caller. In order to use N11 as a CO code, steps similar to those described above for NPA use would be required. There is no estimate of the cost of this enterprise either.

Use of N11 as a "Prefix"

All prefixes that have been established in the LSSGR begin with either 0 or 1. The digit 0 may be either a prefix, if additional digits follow it, or a request for operator service if they do not. The initial digit 1 may or may not be a prefix and may introduce several format variations. For example, the Carrier Access Code (CAC) segment 10XXX begins with a 1, but the 1 is not a prefix, whereas the sequence

1+NPA-NXX-XXXX uses 1 as a prefix. In the three digit format N11, where N represents the numbers 2 through 9 and X the numbers 0 through 9, the first digit - N - does not represent 0 or 1, and, therefore, the network cannot recognize N11 as a prefix. If 0+N11 or 1+N11 is dialed, the call is undefined and treated as vacant. (There is an exception for 911.) In sum, the three digit format N11 represents a complete code. If N11 were assigned to a carrier (or a customer, for that matter), the carrier could not use it as a prefix to accept digits to be dialed after the N11 sequence. Establishing N11 for use as a prefix would require somewhat more complex switching, software and administrative requirements than those described above for NPA and CO use.

The Need for Switch Modifications

In paragraph 10 of the Notice of Proposed Rulemaking the Commission speculates that carriers that do not use N11 dialing, principally 411 or 911, may need to modify their switches to process N11 calls. It is true that not all LECs offer 411 for directory assistance and/or 911 for emergency calls in every end office. Certain switches in the network, such as step-by-step switches, simply cannot accommodate N11 dialing. Each LEC has an installed base of equipment which may include some of the older electromechanical switches, and each LEC has a capital plan to upgrade its network, including switch enhancements and replacements. If N11 codes are to be assigned to enhanced service providers (ESPs), those ESPs should understand the current and future network capabilities of the serving areas in which they do business.

Technological Solutions to the Scarcity of N11 Codes

In paragraph 16 of the NPRM the Commission seeks comment on "whether any new network features or functions are now, or might soon be, available that could offer technological solutions to the scarcity of N11 codes." While it is obviously not possible to create more than the finite number of N11 codes, there are other abbreviated dialing formats that could provide technical alternatives to N11. These include Vertical Service Codes (i.e., *XX), #XX and some number of digits followed by the pound sign (#) to signal the end of dialing. Like other numbering resources, these options are limited.

The first option, the Vertical Service Code, is currently in use. The Vertical Service Code Workshop, sponsored by the Industry Carriers Compatibility Forum (ICCF), is now developing requirements for proposed expansion and assignment guidelines for three digit Vertical Service Codes (*XXX) and other alternatives presented by participants. The second option, #XX, is also now available, and only one code (#56) has been assigned. The format is designed to serve as a facility indicator to select trunk groups, but it could be used to seize a trunk for a particular carrier or type of service. The third option might be to dial a three digit code (XXX) followed by the # sign, which typically indicates the end of calling. The call would then be processed based on the number of digits preceeding the #. Offsetting the benefit of abbreviated dialing would be the elimination from potential service of 10,000 numbers as a Central Office code: it would be too confusing for customers to have the same three digit code assigned for abbreviated dialing access to an ESP and for a CO code in the local network.

Mr. Peyton Wynns
September 10, 1992
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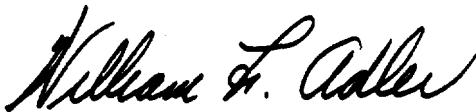
It must be noted that any abbreviated dialing code using # can be offered only to customers with touch tone phones. No alternatives to the # are available to those customers with rotary telephones. On the other hand, abbreviated dialing which utilizes the * can be offered to both rotary and touch tone customers because rotary customers can access the service by dialing 11. Switches translate 11 into *. According to one recent study, approximately 30 percent of households still use rotary telephones.

The public switched network is providing increasingly more flexibility and intelligence. From a technical point of view, modern switches can handle a multitude of tasks if proper translations are planned and provided for. However, the more that is required of a switch, the more complex the translation tables must be, the more powerful the processor required, and consequently, the greater the cost of upgrading the switch. Furthermore, the switch's versatility is dependent upon the memory resident in it. The introduction of services which require complex translations could require more memory capacity than resides in the typical switch. Careful evaluation and testing of memory capacity would be necessary prior to introducing new services that do not rely on existing dialing arrangements. Even if concerns about technology were satisfied, LECs would have to examine the capability of operational support and billing systems.

The public switched network is capable of doing a great many things, but not without cost measured in both dollars and diversion of numbering resources from use by the general public. It remains the position of Pacific Bell and Nevada Bell, as expressed in their comments and reply comments, that the proponents of abbreviated dialing for enhanced services have failed to present any evidence that the consumer will be better off or that the existing seven- and ten-digit dialing sequences in any way hamper the development of the information industry.

I hope that the foregoing information is useful. Please contact me if you need additional assistance.

Sincerely,



William F. Adler
Executive Director-Federal Regulatory Relations
Pacific Telesis Group

CC: Kenneth Robinson
Brian Fontes
Kathleen Abernathy
Madelon Kuchera
Linda Oliver
Cheryl Tritt